# On a Supervised Classifier that can better learn from Mixed Peaks-over-Threshold

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**Abstract: The traditional supervised classifier is based on the assumption of weighted Gaussian mixing components. The classifier is absolutely misleading when the underlying assumption is much violated as is the case of Peaks-Over-Threshold (POT) data. This paper, presents an alternative parametric classifier that can learn optimally from mixtures of such typically skewed components. The classifier is theoretically based on the assumption that the mixing components can be modeled by Generalized Pareto distribution with apriori known sub-group indices.**

**Key words: statistical training, POT-data, Optimal Classifier, Generalized Pareto distributions, apriori probability, mixing components, optimal boundary, predicted sub-grouping.**